

## CLAIMS

1. Locking element (8,9;60) for locking and unlocking a cable connector (2) and a counterpart (3,7), said locking element (8,9;60) extending along a longitudinal axis (40;63) between a rear side (41;61) and a mating side (42;62), said mating side (42;62) comprising two or more resilient beams (43;65) extending substantially parallel to said longitudinal axis (40;63) and containing one or more locking structures (44;66) comprising an insertion surface (50;67) and a locking surface (51;68) disposed at angles ( $\alpha, \alpha'$ ) with said longitudinal axis (40;63) characterized in that said insertion surface (50;67) and said locking surface (51;68) have an inclined orientation with respect to said longitudinal axis (40;63) wherein said angle ( $\alpha'$ ) of said locking surface (51;68) is larger than said angle ( $\alpha$ ) of said insertion surface (50;67) but substantially smaller than 90 degrees.
2. Locking element (8,9;60) according to claim 1, wherein said insertion surface (50;67) and said locking surface (51;68) substantially determine said locking structure (44;66).
3. Locking element (8,9;60) according to claim 1 or 2, wherein a solid of revolution of said locking structure (44;66) comprises a substantially conically shaped portion.
4. Locking element (8,9;60) according to any one of the preceding claims, wherein said locking structure (44;66) is determined by a first solid of revolution having a first substantially conical shape and a second solid of revolution having a second substantially conical shape and wherein said insertion surface (50;67) is determined by a surface of said first substantially conical shape and said locking surface (51;68) is determined by a surface of said second substantially conical shape.
5. Locking element (8,9) according to any one of the preceding claims, wherein said locking element (8,9) comprises one or more slits (45).

6. Locking element (60) according to any one the claims 1-4, wherein said locking element (60) comprises a hole (64) at or near said mating side (62) determining said resilient beams (65).

5           7. Locking element (8,9;60) according to any one of the preceding claims, wherein said mating ends of said resilient beams (43;65) are rounded off.

8. Locking element (8,9;60) according to any one of the preceding claims, wherein said locking element (8,9;60) comprises a retaining structure (69) adapted to keep said locking element (8,9;60) attached to either said cable connector (2) or said counterpart (3,7).

9. Connector system (1) comprising a cable connector (2) and a board connector (3) wherein one or more locking elements (8,9;60) are applied to connect said cable connector (2) and board connector (3), said locking elements (8,9;60) having a locking structure (44;66) and extending along a longitudinal axis (40;63) between a rear side (41;61) and a mating side (42;62)

20 characterized in that

said locking structure (44;66) is disposed on one or more resilient beams (43;65) extending substantially parallel to said longitudinal axis (40;63).

10. Connector system (1) according to claim 9, wherein said locking structure (44;66) comprises an insertion surface (50;67) having an inclined orientation with respect to said longitudinal axis (40;63).

11. Connector system (1) according to claim 10, wherein said locking structure (44;66) comprises a locking surface (51;68) having an inclined orientation with respect to said longitudinal axis (40;63) wherein the inclination angle ( $\alpha'$ ) of said locking surface (51;68) is larger than the inclination angle ( $\alpha$ ) of said insertion surface (50;67) but substantially smaller than 90 degrees.

12. Connector system (1) according to any one of the claims 9-11, wherein said locking elements (8,9;60) are locking elements (8,9;60) according to any one of the claims 2-8.

13. Connector system (1) according to any one of the claims 9-12, comprising two or more locking elements (8,9) of different length along said longitudinal axis (40).

5 14. Connector system (1) according to any one of the claims 9-13, wherein said cable connector (2) and board connector (3) connect to each other via an aperture (6) in a panel (7), said locking element (60) comprising a retaining structure (69) adapted to keep said locking element (60) attached to said panel (7).

10 15. Connector system (1) according to any one of the claims 9-14, wherein board connector (3) or a counterpart (3) comprises a locking structure for receiving the locking element (8,9).

15 16. Connector system (1) according to claim 15, wherein said locking structure comprises a threaded hole (10;11,11').